

STRATA

Fast Local Inference for Qwen3.8-Flash-Next (125B)

How to Run
Massive Mixture-
of-Experts Models
on Consumer
Hardware



Model
Architecture



MoE
Sparsity



Memory
Hierarchy

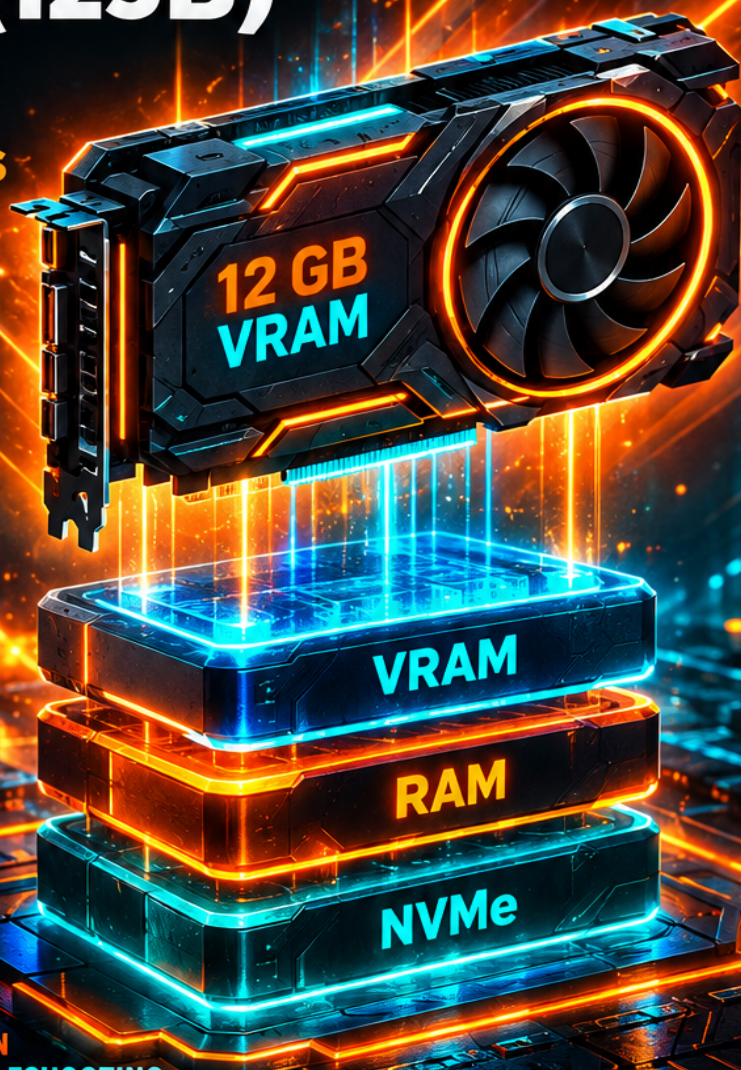


CPU/GPU
Execution



Speculative
Decoding

INSTALLATION / CONFIGURATION
PERFORMANCE TUNING / TROUBLESHOOTING



ANDREW FOSTER

Strata: Fast Local Inference for Qwen3.8-Flash-Next (125B)

How to Run Massive Mixture-of-Experts Models on
Consumer Hardware

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How to Run Massive Mixture-of-Experts Models on Consumer Hardware

Strata is a purpose-built inference runtime that makes it possible to run the 125B-parameter Qwen3.8-Flash-Next model at interactive speed on a single gaming GPU with as little as 12 GB of VRAM. This book explains exactly how it works, why it works and how to make it work for you. You will learn the architecture of Qwen3.8-Flash-Next, the mechanics of extreme mixture-of-experts sparsity, the three-tier memory hierarchy that distributes the model across VRAM, system RAM and NVMe storage, the CPU/GPU heterogeneous execution model, the pipelined PCIe transfers that hide latency, the speculative decoding that multiplies throughput and the practical details of installation, configuration, performance tuning and troubleshooting. If you are an engineer, ML practitioner, or advanced hobbyist who wants to understand and deploy Strata locally, this book is your guide.

Introduction

A claim appeared on Hacker News in October 2026 that sounded like a typo: someone was running a 125B-parameter model on a gaming PC with a 12 GB graphics card at over 90 tokens per second. The model was Qwen3.8-Flash-Next, a preview of the next generation of Alibaba's Qwen family. The engine was Strata, a project by a developer named Niko1221. The repository quickly accumulated more than 17,000 stars and the Hacker News thread gathered hundreds of points and dozens of comments from people trying to understand how it was possible [1,2,3].

It is possible. And once you understand the mechanics, it is inevitable.

Strata does not make a dense 125B model run fast on a 12 GB GPU. That is mathematically impossible. What it does is take a different model, a sparse mixture-of-experts model where only about 10 of 512 experts are activated per token and it changes the inference problem from “fit and compute the entire model in GPU memory” to “keep only the computation required for the current token fast and local and store the rest efficiently.” This reframing, combined with aggressive quantization, multi-tier memory management, CPU/GPU heterogeneous execution and speculative decoding, turns an impossible problem into a practical one.

This book walks through the entire stack. You will learn what makes Qwen3.8-Flash-Next architecturally unique, why its extreme MoE sparsity is the foundational enabler, why conventional inference engines struggle with it and how Strata exploits every available optimization to achieve remarkable performance. You will understand the memory hierarchy in detail, the expert caching mechanisms, the PCIe pipelining that hides data transfer latency, the quantized computation kernels that avoid expensive dequantization, the MTP speculative decoding that verifies multiple tokens in a single pass, the prompt lookup that reuses context to skip computation and the KV cache streaming that makes long-context inference feasible. You will also get a complete practical guide for hardware selection, installation, configuration, performance tuning and troubleshooting.

The through-line of this book is a single design philosophy: Strata succeeds by avoiding unnecessary computation and avoiding unnecessary data

movement rather than by making more of either one. Every mechanism in the engine, from expert caching to speculative decoding, is an attempt to ensure that when the GPU or CPU does work, it is on data that is actually needed and that the data is already where it needs to be.

If you are reading this book, you probably already know what a transformer is, you have probably run a small model locally and you have probably wondered whether running something much bigger is possible on your hardware. By the end, you will know exactly what is possible, why it works that way and how to make it happen.

Chapter 1: Qwen3.8-Flash-Next - A Preview of Qwen4

The Qwen4 Preview: Why Qwen3.8-Flash-Next Exists

Qwen3.8-Flash-Next was released on August 26, 2026 as an experimental preview of the architecture that will underpin the Qwen4 family. It is not a polished production model; it is a concrete demonstration of design choices that Alibaba's Qwen team believes will define the next generation of efficient, capable large language models [4,5,6]. The model's full name signals its position: "3.8" marks it as part of the 3.x experimental line, "Flash" indicates its efficiency focus and "Next" points forward to what Qwen4 will look like.

The central claim behind Qwen3.8-Flash-Next is striking in its numbers. The model has 125 billion total parameters but activates only about 6 billion per token. It includes an additional 51 billion parameters in off-accelerator n-gram tables and roughly 4 billion parameters in a multi-token prediction head. Despite being significantly smaller than its predecessor Qwen3.7-Plus, a 397 billion parameter model, it matches or exceeds that model's capabilities on many benchmarks while training on approximately one-ninth of the floating-point operations [7,8].

This claim only makes sense if you understand the architecture. The traditional transformer approach to scaling has been to make models bigger, with more parameters activated per token and to rely on ever more powerful hardware to handle the cost. Qwen3.8-Flash-Next represents a deliberate break from that pattern. It takes a radically different approach to token mixing, attention and memory that trades dense computation for sparse routing, recurrent state for full attention and external lookup tables for internal parameterization. Strata is able to run this model efficiently on consumer hardware precisely because of these design choices, so understanding the architecture is not optional background; it is the foundation for everything that follows.

Gated DeltaNet: Linear-Cost Recurrent Mixing

The first major innovation in Qwen3.8-Flash-Next is Gated DeltaNet, or GDN, a recurrent mechanism that replaces the standard self-attention layers used in conventional transformers for most of the layer budget. In a standard transformer, every layer computes attention across the entire context. For a context of N tokens, that is an $O(N^2)$ operation in time and memory. For long contexts, this becomes a fundamental bottleneck.

GDN works differently. It maintains a fixed-size recurrent state that is updated token by token using a “targeted erase-and-write” mechanism. Each token selectively modifies portions of the state based on learned gating signals, compressing relevant information from the context into a compact representation at linear cost per token [9,10,11]. This means that processing a 262K-token context requires roughly the same per-token work as processing a 4K-token context, whereas in a full-attention transformer the long context would be exponentially more expensive.

The gating is critical. Without it, a recurrent mechanism would simply overwrite its state with each new token, losing earlier information. The gates learn which parts of the existing state to preserve, which to modify and which to erase, allowing the model to maintain useful long-range context in a compressed form. This is not a heuristic; it is a learned mechanism and the Qwen team reports that it enables effective long-context reasoning without the quadratic cost of full attention.

Qwen3.8-Flash-Next does not replace all attention with recurrence. The 48 layers are organized as 12 blocks and each block contains three GDN layers followed by one sparse attention layer. This 3:1 ratio gives the model both the efficiency of recurrent mixing and the precision of selective attention at block boundaries [12,13]. The GDN layers handle the bulk of token mixing at linear cost, while the sparse attention layers retain the ability to retrieve specific information from distant parts of the context when it matters.

Qwen Sparse Attention: Selective Retrieval at Block Boundaries

The attention layer at the end of each block is not standard dense attention. It is Qwen Sparse Attention, or QSA, which operates at the micro-block level

rather than selecting individual tokens. Instead of computing attention scores for every token in the context, QSA indexes the context into micro-blocks and computes attention across those blocks, then selects the most relevant ones for detailed processing [14,15].

This design choice is significant for inference. Full attention over long contexts requires loading enormous key-value matrices into GPU memory and performing massive matrix multiplications that dominate both time and memory bandwidth. QSA reduces this burden by operating on compressed representations of context blocks. The Qwen team reports kernel-level measurements showing that QSA achieves approximately 7.6 times speedup for prefill and 4.9 times speedup for decode at 1 million tokens of context compared to dense attention [16].

For Strata, this matters in a specific way. The attention layers are among the components that must remain on the GPU because they are on the latency-critical path. If the attention mechanism required full dense computation over the entire context, the memory bandwidth and VRAM demands would be enormous. QSA's block-level sparsity keeps the GPU workload manageable, allowing Strata to allocate VRAM to other critical components like expert caching and KV cache management.

The MoE Backbone: 512 Experts, Ten Active Per Token

The most important architectural feature for Strata's success is the mixture-of-experts configuration. Qwen3.8-Flash-Next has 512 experts per MoE layer and for each token, the router activates exactly 10 of them, plus 1 shared expert that is always used. This means that while the model stores 125 billion parameters, only about 6 billion are actually used for computation on any given token [17,18,19].

The MoE layers follow the same 3:1 pattern as the rest of the architecture: three GDN layers with MoE feedforward networks, followed by one QSA attention layer. Each MoE layer has its own router that examines the token's representation and selects which experts to activate based on learned affinity scores. The router typically uses a softmax over expert scores followed by top-k selection to pick the 10 most relevant experts.

With 48 layers and roughly 36 MoE layers (the three GDN layers per block across 12 blocks), the total number of expert weight sets across the model

is approximately 24,576 individual expert instances. Each expert is relatively small, but collectively they form the vast majority of the model's parameters. This is the extreme sparsity that Strata exploits: at any given moment, only about 10 out of 512 experts per MoE layer are computing, which means roughly 2 percent of the experts are active per layer and the vast majority of expert weights are sitting idle [20,21,22].

The router's decisions are not random. Different experts tend to specialize in different types of computation and the router's choices are influenced by the content of the prompt and the tokens being generated. This creates patterns of expert selection that exhibit temporal locality, meaning that experts activated for one token are more likely to be activated again for subsequent tokens in the same context. Strata's expert caching mechanism depends heavily on this locality behavior.

N-Gram Embedding: 51 Billion Parameters Off the Accelerator

Qwen3.8-Flash-Next includes an n-gram embedding table with approximately 51 billion additional parameters. This table is not part of the main transformer computation graph. It is a large lookup structure that maps n-gram patterns in the context to embedding vectors, which are then used to augment the model's representations [23,24,25].

The n-gram table operates at a specific layer in the model and uses hashing to look up bigrams and trigrams from the recent context. With roughly 20 million entries in its vocabulary table, it can capture recurring patterns in code, technical writing and natural language without requiring the main model to learn them all through standard training. The table is designed to be held in system RAM rather than GPU memory, which is why it is called “off-accelerator” [26,27].

For Strata, the n-gram table presents both an opportunity and a memory burden. On one hand, it supports prompt lookup and context speculation, mechanisms that can skip expensive model evaluations by predicting tokens based on previously seen patterns. On the other hand, the table is large and at approximately 28.8 GB in quantized form, it must be stored on NVMe SSD and accessed efficiently. Strata's three-tier memory hierarchy places the n-gram

table on SSD because it is primarily used during prefill and can be loaded on demand [28,29].

Multi-Token Prediction: A Built-In Speculative Head

The final architectural component is the multi-token prediction head, or MTP head, which is a roughly 4 billion parameter module trained alongside the main model to predict multiple future tokens in a single forward pass. This is not a separate draft model; it is integrated into the architecture as an additional output head that produces candidate tokens for speculative decoding [30,31,32].

During inference, the MTP head generates several draft tokens rapidly and then the main model verifies them in a single pass. If the draft tokens match what the main model would have produced, they are accepted, effectively giving you multiple tokens for the cost of one expensive verification step. The acceptance rate depends on how well the draft tokens match the main model's distribution and typical reported rates suggest meaningful speedups in practice [33,34].

Strata leverages the MTP head as a core acceleration mechanism. Because the head is built into the model's checkpoint, there is no need for a separate draft model, no additional training and no distribution mismatch from using an external drafter. Strata keeps the MTP head on the GPU because speculative decoding is on the latency-critical path and every millisecond saved in draft generation and verification translates directly to higher tokens-per-second output.

Summary

Qwen3.8-Flash-Next is a deliberate experiment in rethinking how large language models can be structured for efficiency without sacrificing capability. Its combination of recurrent token mixing, sparse attention, extreme MoE sparsity, external n-gram tables and integrated multi-token prediction creates a model that is simultaneously enormous and highly selective about what it computes. For a conventional inference engine that expects to load the entire model into GPU memory, this is a nightmare. For a specialized engine like Strata that is designed to exploit these exact properties, it is an opportunity.

The architecture gives Strata something crucial: a model where the total stored parameters are massive, but the computation per token is comparatively small and the inactive portion is large enough that keeping it off the GPU is not just possible, it is the only sensible approach. The next chapter examines that sparsity in depth and explains why it is the foundational enabler for everything Strata does.

Chapter 2: Mixture-of-Experts Sparsity

- Why This Model Is Different

Dense Versus Sparse: What “125 Billion Parameters” Actually Means

When people say that Qwen3.8-Flash-Next is a “125 billion parameter model,” they are describing the total stored weight matrices in the checkpoint. In a dense model with 125 billion parameters, every single one of those parameters is used to compute the output for every single token. There is no choice. The matrix multiplications that define the model’s layers apply all the weights to all the inputs and the GPU has no option but to process them all.

Qwen3.8-Flash-Next is not dense. It is a sparse mixture-of-experts model. The 125 billion parameters represent the union of all expert weights across all layers, but for any given token, only about 6 billion of them are actually multiplied and summed to produce output. The remaining 119 billion are sitting idle, untouched by the computation for that token. They will be used for other tokens, probably, but not this one. This is the fundamental distinction between dense and sparse: a dense model computes with everything, always and a sparse model computes with a small subset, chosen dynamically [35,36,37].

The distinction is not just academic. It has direct consequences for how you think about inference. With a dense 125 billion parameter model, there is no reasonable way to avoid loading all 125 billion parameters into GPU memory and computing with all of them. You cannot selectively skip 119 billion parameters that are “not needed this turn” because they are all needed, always. With a sparse MoE model, you can ask a different question: do I really need all 125 billion parameters on the GPU if only 6 billion are doing work at any moment?

For a general-purpose inference engine, the answer is usually still “yes,” because moving weights around on demand introduces more overhead than it saves. For a specialized engine like Strata, built around a specific model with specific routing patterns and specific memory characteristics, the answer is “no.” This is the first insight that makes Strata possible.

Router Mechanics: How Experts Are Selected Per Token

Every MoE layer in Qwen3.8-Flash-Next has a router, a small neural network that examines the hidden state of each token and produces scores for all 512 experts in that layer. The router then applies a softmax to convert the scores into probabilities and selects the top 10 experts with the highest probabilities [38,39]. The token's representation is passed through all 10 selected experts and the outputs are weighted and summed according to the router's softmax scores to produce the final MoE output for that layer.

The router's job is to direct each token to the experts that are best suited for processing it. Some experts may specialize in mathematical reasoning, others in code generation and others in natural language understanding. The router learns during training which experts are useful for which inputs and the result is a highly specialized model where different parts of the weight space handle different kinds of computation.

The selection happens independently for each token in the sequence. Token A might activate experts 3, 17, 42, 89, 156, 203, 287, 341, 402 and 501, while token B activates a partially overlapping set. There is no global constraint that says "these experts must be used X percent of the time" beyond the training-level load balancing objectives that prevent all tokens from routing to the same few experts [40,41].

For Strata, the router's behavior is critical because it determines which experts need to be available at which moments. If the router's choices were uniformly random across all 512 experts, there would be no locality, no predictability and no caching advantage. Strata would have to shuffle experts in and out of GPU memory on every token and the PCIe bandwidth would be the bottleneck. Fortunately, router behavior is not random and the locality patterns it creates are one of the key mechanisms that Strata exploits.

The Twenty-Four Thousand Expert Pool Across All Layers

The 512 experts per MoE layer are not shared across the model. Each MoE layer has its own independent set of 512 experts, with their own distinct weights. With approximately 36 MoE layers in the model, the total number of expert

weight sets is roughly 18,432 individual expert instances. This number varies depending on the exact layer configuration, but the magnitude is the same: there are tens of thousands of separate expert weight matrices stored in the model checkpoint [42,43].

Each expert is relatively small compared to the entire layer. The config for Qwen3.8-Flash-Next shows a hidden size of 2,560, a `moe_intermediate_size` of 640 and a `shared_expert_intermediate_size` of 640. Each MoE expert typically has up and down projection matrices, meaning the weight for one expert in one layer is approximately $2 * 2560 * 640 = 3,276,800$ parameters. At 2 bytes per parameter in BF16, that is about 6.5 MB per expert. At 2-bit quantization, it is closer to 800 KB [44,45].

Do the arithmetic. If each expert is roughly 800 KB at 2-bit quantization and there are roughly 18,000-24,000 experts total, the total MoE expert pool is on the order of 14-19 GB. Combined with the shared experts, the non-MoE layers, the attention weights, the embedding tables, the MTP head and the n-gram table, the full model checkpoint requires approximately 37-84 GB depending on quantization format. No consumer GPU can hold that entirely in VRAM [46,47].

But you do not need to. At any moment, only about 10 experts per MoE layer are active, which is about 360 experts across all MoE layers simultaneously. At 800 KB per expert, that is roughly 288 MB of active expert weights. That fits easily on a 12 GB GPU, with plenty of room for attention weights, KV cache and other components. The problem is not that there is not enough VRAM for the active computation. The problem is that the active experts change from token to token and you need a mechanism to keep the right experts available at the right time without paying prohibitive transfer costs.

That mechanism is Strata's expert caching and scheduling system, which will be covered in detail later. For now, the key point is this: the model stores a vast pool of experts, but only a small fraction are ever needed at once and that gap between stored capacity and active demand is exactly what Strata is designed to exploit.

Six Billion Active Parameters: What Actually Computes

The official specification states that Qwen3.8-Flash-Next activates 6 billion parameters per token. This includes the MoE experts selected by the routers (10 routed + 1 shared per MoE layer), the shared/non-MoE components that

are always active (the attention layers, the GDN recurrent state updates and the residual connections) and the final output projection. The 6 billion is not just the MoE portion; it is the total active parameter budget for a single token [48,49].

To put this in perspective, 6 billion active parameters is similar to the size of a mid-range dense model. A dense Qwen3.8-27B model activates all 27 billion of its parameters for every token. Qwen3.8-Flash-Next, with 125 billion stored, activates fewer. This means that the actual computation per token in Qwen3.8-Flash-Next is less expensive than in a dense 27B model, even though the stored model is five times larger. The trade-off is that the MoE model requires more complex routing logic and expert management, but the pure arithmetic workload per token is lower [50,51].

This has a direct implication for Strata’s performance. If the active workload per token is comparable to a 6B dense model and Strata can keep the active experts on the GPU and compute them efficiently, then the GPU is doing roughly the same amount of work per token as it would for a 6B model. The fact that 119 billion parameters are sitting idle in RAM and on SSD does not slow down the computation, as long as Strata’s scheduling keeps the right experts available.

Load Balancing and Expert Selection Patterns

During training, MoE models use load balancing objectives to prevent all tokens from routing to the same few experts, which would waste the capacity of unused experts and create hotspots. The result is that, over a large corpus, most experts tend to be used roughly equally. However, “over a large corpus” is not the same as “over a single prompt.”

For a single prompt or conversation, the expert selection is not uniformly distributed. Certain experts are more likely to be activated for specific topics, tasks, or token patterns. If the model is generating code, code-specialized experts are more likely to be selected. If the model is doing mathematical reasoning, the corresponding experts are more active. This creates temporal locality: experts that were useful recently are more likely to be useful again in the near future [52,53].

This locality is not perfect and it is not universal. Different prompts, different tasks and different conversation turns can activate very different

expert sets. But it is significant enough that Strata's caching strategy, which keeps recently used experts in GPU memory, achieves meaningful cache hit rates. When a token's router selects an expert that is already cached on the GPU, Strata avoids both the PCIe transfer and the CPU computation that would be required to fetch and compute that expert from RAM.

The degree of locality depends heavily on the workload. A long code editing session, where the same patterns and syntax recur, will have high expert locality and benefit enormously from caching. A series of completely different questions, each on a different topic, will have lower locality and see more cache misses. Strata's performance is therefore workload-dependent and this is an important factor to understand when evaluating whether Strata is the right tool for a particular use case.

Why Sparsity Matters More Than Total Parameter Count

The conventional wisdom in the LLM community has long been that parameter count is the primary determinant of capability. Bigger models, in this view, are better models. This is true, but it is an incomplete picture. The more complete picture distinguishes between stored capacity and active capacity. A sparse MoE model with 125 billion stored parameters and 6 billion active per token is architecturally different from a dense model with 125 billion active parameters, even though they share the same total count.

The stored capacity determines how much knowledge and specialization the model can encode. The 125 billion parameters of Qwen3.8-Flash-Next allow it to have a vast pool of specialized experts that can handle many different kinds of computation, each expert optimized for its particular domain. The active capacity determines how much computation is performed per token, which in turn determines the memory bandwidth, GPU workload and latency for inference [54,55].

For Strata, the active capacity is what matters most. The engine's job is to make the 6 billion active parameters compute as fast as possible, while storing the other 119 billion as cheaply as possible and fetching them only when needed. The stored parameters are an asset for capability, but they are a liability for inference speed unless the engine is designed to handle them correctly. Strata is designed for exactly this situation and its success is fundamentally tied to the model's extreme sparsity.

If you are evaluating whether Strata will work well for your use case, the first question is not “how powerful is my GPU” but “how sparse is the model I want to run.” Strata is built around the specific sparsity pattern of Qwen3.8-Flash-Next and it exploits that sparsity to achieve its remarkable performance. A denser model, or a model with a different expert configuration, would not benefit from the same optimizations in the same way.

Summary

Qwen3.8-Flash-Next is a fundamentally different kind of model than the dense transformers that most people are familiar with. Its 125 billion parameters represent a vast pool of stored capacity, but its 6 billion active parameters per token represent a much more modest compute workload. The gap between stored and active is not a bug; it is a feature and it is the foundational enabler for Strata’s architecture.

The router’s selection of 10 out of 512 experts per layer creates a dynamic activation pattern that changes from token to token. The temporal locality in that pattern, combined with the relatively small size of individual experts, makes it possible to keep a subset of experts cached on the GPU while storing the rest in RAM and fetching from SSD when necessary. Strata’s entire design is built around exploiting this sparsity and understanding it is essential to understanding why Strata works.

The next chapter explains why conventional inference engines, which are not designed around this sparsity, struggle with models like Qwen3.8-Flash-Next on consumer hardware. Understanding the failure modes of the alternative approaches makes Strata’s solutions easier to appreciate.

Chapter 3: Why Conventional Inference Fails for Massive MoE

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Chapter 4: Strata's Core Architecture - A Purpose-Built Scheduler

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Chapter 16: Prompt Lookup and Context Speculation

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How Prompt Lookup Works: Finding Repeated N-Grams in Context

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Why This Excels at Code Editing and Copied Material

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Differences Between Prompt Lookup and MTP

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Reducing Full Model Evaluations Through Context Awareness

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Chapter 17: KV Cache Optimization and Streaming

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Why KV Cache Eats VRAM at Scale

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The Fundamental Trade-Off: KV Cache Versus Expert Residency

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KV Streaming: Most Cache in RAM, Only Hot Reads in VRAM

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Long-Context Inference: Preserving Performance at 262K Tokens

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KV Cache Hit Rates in Practice

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Configuration Tuning for Different Context Lengths

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Chapter 18: Expert Locality - When Routing Is Predictable

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Why Expert Selection Is Not Uniformly Random

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Sticky Routing and Temporal Patterns

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How Locality Reduces CPU Execution and PCIe Movement

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Cache Effectiveness and Routing Distribution

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Measuring Expert Switch Rate and Cache Hit Rate

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Why Some Workloads Benefit More Than Others

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Chapter 19: The Scheduling Problem - How All Mechanisms Coordinate

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Expert Placement Decisions

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Execution Location Routing: GPU Versus CPU

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PCIe Transfer Scheduling and Prioritization

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KV Cache Placement and Eviction

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Prefill Chunking and Parallel Request Handling

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Chapter 20: Compounding Parallelism - Why Speedups Multiply

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Model-Level Sparsity: Only Ten Experts Per Token

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Device-Level Parallelism: CPU and GPU Working Simultaneously

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Pipeline Parallelism: Transfer and Computation Overlap

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Temporal Parallelism: Expert Caching Reduces Future Work

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Token-Level Speculation: MTP Drafts Reduce Verification Cost

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Context-Level Speculation: Prompt Lookup Skips Full Evaluation

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How These Mechanisms Interact and Compound

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Chapter 21: Why Is Strata So Fast?

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Tracing a Single Token: End-to-End Execution

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The Design Philosophy: Do Only What Is Necessary

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Chapter 22: Hardware Planning - Choosing Your Rig

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GPU Selection: Why VRAM Capacity Often Beats Raw Compute

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RAM Requirements: 32GB Minimum, 64GB Recommended, 96GB Ideal

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CPU Choices: AVX2 Required, AVX-512 Beneficial

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Storage: NVMe SSD Is Non-Negotiable for the N-Gram Table

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PCIe Considerations: Lane Count and Generation

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Multi-GPU Configurations and Their Value

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Chapter 23: Installation - Getting Strata Running

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Prerequisites: GPU Drivers, CUDA, Build Tools

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Cloning the Repository

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The One-Click Installers: START-HERE.bat and setup.sh

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Model Family Selection: Coder, Qwen, Unsloth

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Building from Source: When and How

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Verifying Installation and Running the Health Check

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Chapter 24: Configuration - Tuning for Your Hardware

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strata.json Configuration File

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Calibration Mode for Hardware Optimization

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Chapter 25: Running Qwen3.8-Flash-Next - Prompt, Generate, Monitor

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The Web UI at localhost:8080

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OpenAI-Compatible API Integration

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Anthropic-Compatible API for Claude Clients

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Connecting Coding Tools: Cursor, Claude Code and MCP

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Chapter 26: Performance Tuning - Understanding What Makes Your Setup Fast or Slow

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Reading Tokens Per Second: Prefill Versus Decode

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Cache Hit Behavior and Expert Residency Metrics

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GPU and CPU Utilization: What Good Looks Like

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Chapter 27: Benchmarking - Measuring What Matters

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Separating Prefill from Decode Metrics

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Context Length Impacts: 4K, 32K, 128K, 262K

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Speculative Token Acceptance Measurement

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Strata Versus llama.cpp and Other Engines

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Community Benchmark Submission Guidelines

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Interpreting Benchmarks with Context

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OOM and VRAM Exhaustion Errors

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Driver, CUDA and Compatibility Issues

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When to Check the Community and File Issues

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Chapter 29: Strengths - Where Strata Excels

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RAM Dependency: Insufficient Memory Kills Performance

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Chapter 32: Advanced Concepts - Beyond the Basics

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